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EXAMINER	
AHMED, SALMAN	

ART UNIT	PAPER NUMBER
2666	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/963,771	DELVAUX, MARC	
	Examiner	Art Unit	
	Salman Ahmed	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-20,22-93,95-105* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 September 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 28-31 of the Remarks section, filed 10/21/2005, with respect to the rejection of claims 1, 16, 17, 32, 33, 56, 74, 75, 89. 90 and 105 under 35 U.S.C. 102(e) have been fully considered but they are not persuasive. Applicant argues that the Steer reference teaches opposite of the applicant's invention. However, examiner respectfully disagrees with applicant's assertion. The present claim language is broad and in view of the broadest reasonable interpretation of this language, as indicated in the previous office action, Steer teaches a communication network (column 9 lines 18-26, figures 5-9 and 11A) where a lower priority packet is in the process of being transmitted, the existing packet is "interrupted" and the high priority packets are inserted into the data stream. More specifically, if a high priority packet is to be sent while an existing packet is being transmitted, the transmission of the MPEG blocks of that packet is interrupted, and the high priority packet is inserted into the data stream for transmission. In order to resume transmission (column 10 lines 16-33) of the interrupted packet, the MPEG block used for transmitting the interrupting packet is provided with a continuation field. The continuation field of the MPEG block is set to zero to signal that what follows thereafter in the block payload is the continuation of the interrupted DOCSIS packet.

Applicant argues that Howe discloses packets that are only are headerless as far as not having a source and destination address attached to each packet for the purpose of making network routing more efficient. The final destination router may have to reinsert address for delivery to real-time receiver. The applicant argues the two teachings in combination do not

teach the claimed invention by the applicant. However, examiner respectfully disagrees with applicant's assertion. The present claim language is broad and in view of the broadest reasonable interpretation of this language, as indicated in the previous office action, Howe teaches the advantage (page 15 section 0034) of header-less packet transmissions in a network. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Steer's teaching by incorporating Howe's teaching of header-less data transfer. Examiner respectfully further points out that Howe teaches (page 2 section 0021) high-priority information is defined as information that must be delivered more quickly, more reliably, more accurately, and ahead of other lower-priority information in the network. Howe further teaches (page 3 section 0050) there are generally no "headers" with routing information as part of the data, so there is no header lookup at each network element. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art at the time the invention was made. See In re Keller 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

2. Applicant's arguments, see pages 31-37 of the Remarks section, filed 10/21/2005, with respect to the rejection of groups of claims

-- 3, 4, 5, 6, 34, 35, 37, 38, 46, 51, 57, 58, 59, 60, 65, 79, and 76-79

-- 7, 39, 54, 55, 61, 72, 73 and 80

-- 17-20, 22, 90-93, and 95

-- 8, 11, 12, 23, 26, 27, 31, 44, 49, 63, 68. 81, 84, 85, 96, 99, 100 and 104

-- 9, 10, 24, 25, 43, 45, 47, 48, 50, 52, 62, 64, 66, 67, 69, 71, 82, 83, 97 and 98

-- 13-15, 28-30, 40-42:, 86-88, and 101-103

-- 36 and 53

under 35 U.S.C. 103(a) have been fully considered but they are not persuasive. Applicant argues that the above claims are in condition for allowance for at least the reason the claims depend from allowable independent claims. However, examiner respectfully disagrees with applicant's assertion. The present claim language is broad and in view of the broadest reasonable interpretation of this language, as indicated in the previous office action, the examiner respectfully disagrees with the applicant for the reasons stated above.

3. Applicant's arguments see pages 37 of the Remarks section, filed 10/21/2005, with respect to the rejection claims 15, 30, 42. 88 and 103 have been fully considered and they are persuasive. As such the rejections under 35 U.S.C. 112, second paragraph has been withdrawn.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1, 3, 4, 5, 6, 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Steer et al. (US PAT 6633564), hereinafter referred to as Steer.

In regards to 1, 3, 4, 5, 6, 16 in a signal transmission system, wherein a first data stream transmission is in progress, a method and means for suspending and resuming transmission of the first data stream comprising the steps of: ln a signal transmission system wherein a first data stream transmission is receiving a second data stream having a suspend-flag; comparing the first data stream priority with the second data stream priority; preserving data stream transmission order using a priority sorting mechanism; suspending transmission of the first data stream in response to a higher second data stream priority; transmitting the second data stream; and fluidly resuming transmission of the first data stream after transmitting the second data stream in accordance with the priority sorting mechanism is anticipated by a communication network (column 9 lines 18-26, figures 5-9 and 11A) where a lower priority packet is in the process of being transmitted, the existing packet is "interrupted" and the high priority packets are inserted into the data stream. More specifically, if a high priority packet is to be sent while an existing

packet is being transmitted, the transmission of the MPEG blocks of that packet is interrupted, and the high priority packet is inserted into the data stream for transmission. In order to resume transmission (column 10 lines 16-33) of the interrupted packet, the MPEG block used for transmitting the interrupting packet is provided with a continuation field. The continuation field of the MPEG block is set to zero to signal that what follows thereafter in the block payload is the continuation of the interrupted DOCSIS packet.

In regards to claim 3 Steer teaches (column 5 lines 19-22) that the user information exchanged between the Set Top Boxes and the network is arranged in the form of packets which are each packaged with a header containing identification information such as the packet type and length.

In regards to claim 4, 5, 6 Steer teaches (column 7 lines 14-17) the MPEG header includes synchronization fields and information relating to service identification and transport priority. Steer teaches (column 15 lines 49-55) that when an incoming packet is detected, the current Q pointer is set to the queue Q1, Q2, QN in which the incoming packet is located (hereinafter the "current Q"). When it is time to fill another block, the other queues Q1, Q2, QN are then examined by the algorithm to see if there is any other packet in a queue Q1, Q2, QN of a priority higher than that of the current Q. Steer further teaches (column 18 lines 34-44) as the higher priority packet is detected, the algorithm first sets the interrupt level to a value equal to its current value summed with the difference between the current Q number and the new (higher priority) queue number of the higher priority queue Q1, Q2, QN containing the higher priority packet. The current Q is also updated to point to the higher priority queue Q1, Q2, QN. Once the interrupt level and the current Q numbers are updated to reflect the particular queue Q1, Q2,

QN and priority level of the higher priority packet, the first block may be filled with the higher priority packet.

In regards to 16 in a signal transmission system, wherein a first data stream transmission is in progress, a method and means for suspending and resuming transmission of the first data stream comprising the steps of: in a signal transmission system wherein a first data stream transmission is receiving a second data stream having a suspend-flag; comparing the first data stream priority with the second data stream priority; preserving data stream transmission order using a priority sorting mechanism; suspending transmission of the first data stream in response to a higher second data stream priority; transmitting the second data stream; and fluidly resuming transmission of the first data stream after transmitting the second data stream in accordance with the priority sorting mechanism is anticipated by a communication network (column 9 lines 18-26, figures 5-9 and 11A) where a lower priority packet is in the process of being transmitted, the existing packet is "interrupted" and the high priority packets are inserted into the data stream. More specifically, if a high priority packet is to be sent while an existing packet is being transmitted, the transmission of the MPEG blocks of that packet is interrupted, and the high priority packet is inserted into the data stream for transmission. In order to resume transmission (column 10 lines 16-33) of the interrupted packet, the MPEG block used for transmitting the interrupting packet is provided with a continuation field. The continuation field of the MPEG block is set to zero to signal that what follows thereafter in the block payload is the continuation of the interrupted DOCSIS packet.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Steer and in view of Howe (US PAT PUB 2005/0058149).

In regards to claim 7 Steer teaches data packets having header information being preempted and transmitted according to priority in a network as described in the rejections of claim 1 above.

In regard to claim 7 Steer does not teach data packets without header being transmitted over the network.

In regard to claim 7 Howe teaches the advantage (page 15 section 0034) of header-less packet transmissions in a network.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Steer's teaching by incorporating Howe's teaching of header-less data transfer. The motivation is that header-less data packets have fewer overheads than packets with header and as such more bandwidth efficient.

8. Claims 17, 18, 19, 20, 22, 32, 33, 34, 35, 37, 38, 39, 46, 51, 54, 55, 56, 57, 58, 59, 60, 61, 65, 70, 72, 73, 74, 75, 76, 77, 78, 79, 80, 90, 91, 92, 93, 95, 105 are rejected under 35 U.S.C. 103(a) as being unpatentable over (Steer and in view of Howe (US PAT PUB 2005/0058149)) and in view of Li et al. (US PAT 5757771), hereinafter referred to as Li, in view of Jouppi et al. (US PAT 6795436), hereinafter referred to as Jouppi.

In regards to claims 17, 18, 19, 20, 22, 32, 33, 34, 35, 37, 38, 39, 46, 51, 54, 55, 56, 57, 58, 59, 60, 61, 65, 70, 72, 73, 74, 75, 76, 77, 78, 79, 80, 90, 91, 92, 93, 95, 105 Steer and Howe teach header-less data packets being preempted and transmitted according to priority in a network as described in the rejections of claim 7 above. In regards to claim 57, 58, 77, 78 and 79 Steer teaches (column 7 lines 14-17) the MPEG header includes synchronization fields and information relating to service identification and transport priority. Steer teaches (column 15 lines 49-55) that when an incoming packet is detected, the current Q pointer is set to the queue Q1, Q2, QN in which the incoming packet is located (hereinafter the "current Q"). When it is time to fill another block, the other queues Q1, Q2, QN are then examined by the

algorithm to see if there is any other packet in a queue Q1, Q2, QN of a priority higher than that of the current Q. Steer further teaches (column 18 lines 34-44) as the higher priority packet is detected, the algorithm first sets the interrupt level to a value equal to its current value summed with the difference between the current Q number and the new (higher priority) queue number of the higher priority queue Q1, Q2, QN containing the higher priority packet. The current Q is also updated to point to the higher priority queue Q1, Q2, QN. Once the interrupt level and the current Q numbers are updated to reflect the particular queue Q1, Q2, QN and priority level of the higher priority packet, the first block may be filled with the higher priority packet.

In regards to claims 17, 18, 19, 20, 22, 32, 33, 34, 35, 37, 38, 39, 46, 51, 54, 55, 56, 57, 58, 59, 60, 61, 65, 70, 72, 73, 74, 75, 76, 77, 78, 79, 80, 90, 91, 92, 93, 95, 105 Steer and Howe do not teach of preempting higher priority header-less data packets to send lower priority data packets.

In regards to claims 17, 18, 19, 20, 22, 32, 33, 34, 35, 37, 38, 39, 46, 51, 54, 55, 56, 57, 58, 59, 60, 61, 65, 70, 72, 73, 74, 75, 76, 77, 78, 79, 80, 90, 91, 92, 93, 95, 105 Li teaches (column 9, lines 35-46) a method being provided for ensuring output of ATM cells from data sub-queues that have been waiting to output a cell for some determined period of time, thereby ensuring a minimum bandwidth to that data sub-queue. Specifically, a delay threshold is specified as a service class parameter for each data sub-queue so that if a non-empty data sub-queue has aged beyond this delay threshold, a dispatch-essential flag is raised indicating that the data sub-queue must be serviced before any non-dispatch-essential data sub-queues. A predetermined number of cells must then be dispatched before the dispatch-essential flag is lowered.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Steer's teaching by incorporating Li's teaching of employing delay threshold. The motivation is that, in the art it is desirable to provide a system and method to efficiently control bandwidth allocation such that different classes of service have their transmission requirements met without unduly burdening other class of service.

In regards to claims 90, 91, 92, 93 and 95 Steer and Howe teach header-less data packets being preempted and transmitted according to priority in a network as described in the rejections of claims 7 and 80 above.

In regards to claims 90, 91, 92, 93 and 95 Steer and Howe do not teach of preempting higher priority header-less data packets to send lower priority data packets.

In regards to claims 90, 91, 92, 93 and 95 Li teaches (column 9, lines 35-46) a method being provided for ensuring output of ATM cells from data sub-queues that have been waiting to output a cell for some determined period of time, thereby ensuring a minimum bandwidth to that data sub-queue. Specifically, a delay threshold is specified as a service class parameter for each data sub-queue so that if a non-empty data sub-queue has aged beyond this delay threshold, a dispatch-essential flag is raised indicating that the data sub-queue must be serviced before any non-dispatch-essential data sub-queues. A predetermined number of cells must then be dispatched before the dispatch-essential flag is lowered.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Steer's teaching by incorporating Li's teaching of employing delay threshold. The motivation is that, in the art it is desirable to provide a system and method

to efficiently control bandwidth allocation such that different classes of service have their transmission requirements met without unduly burdening other class of service.

In regards to claims 17, 18, 19, 20, 22, 32, 33, 34, 35, 37, 38, 39, 46, 51, 54, 55, 56, 57, 58, 59, 60, 61, 65, 70, 72, 73, 74, 75, 76, 77, 78, 79, 80, 90, 91, 92, 93, 95, 105 Steer in view of Howe in view of Li teach header-less data packets being preempted and transmitted according to priority (preempting higher priority header-less data packets to send lower priority data packets) in a network as described in the rejections of claims 7 and 80 above.

In regards to claims 17, 18, 19, 20, 22, 32, 33, 34, 35, 37, 38, 39, 46, 51, 54, 55, 56, 57, 58, 59, 60, 61, 65, 70, 72, 73, 74, 75, 76, 77, 78, 79, 80, 90, 91, 92, 93, 95, 105 Steer in view of Howe in view of Li do not explicitly teach resuming first data stream without creating new header for first data stream.

In regards to claims 17, 18, 19, 20, 22, 32, 33, 34, 35, 37, 38, 39, 46, 51, 54, 55, 56, 57, 58, 59, 60, 61, 65, 70, 72, 73, 74, 75, 76, 77, 78, 79, 80, 90, 91, 92, 93, 95, 105 Jouppi teaches (figure 5, element 506, only one IP header for both fragment) resuming first data stream without creating new header for first data stream.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify, Steer in view of Howe in view of Li's teaching by incorporating Jouppi's teaching of resuming first data stream without creating new header for first data stream. The motivation is that (as suggested by Jouppi, column 7 lines 46-49) fragmentation of the

packets increases the amount of information to be transmitted, because the information has to be supplemented with header information.

In regards to claim 33 figure 10 numeral 150 shows a scheduler process to perform the above described functionalities.

In regards to claim 76 Steer teaches (column 5 lines 19-22) that the user information exchanged between the Set Top Boxes and the network is arranged in the form of packets which are each packaged with a header containing identification information such as the packet type and length.

9. Claims 8, 11, 12, 23, 26, 27, 31, 44, 49, 63, 68, 81, 84, 85, 96, 99, 100 and 104 are rejected under 35 U.S.C. 103(a) as being unpatentable over (Steer, in view of Howe, in view of Li in view of Jouppi) and in view of Maresca (US PAT 6181693).

In regards to claims 8, 11, 12, 23, 26, 27, 44, 49, 63, 68, 81, 84, 85, 96, 99 and 100 Steer, in view of Howe, in view of Li in view of Jouppi teach data packets having no header information being preempted and transmitted according to priority in a network as described in the rejections of claim 1, 3, 4, 5, 6, 16, 32, 33, 34, 35, 37, 38, 46, 51, 56, 57, 58, 59, 60, 65, 70, 74, 75, 76, 77, 78, 79 and 89 above. In regards to claims 23, 26, 27, 31, 44, 49, 63, 68, 96, 99, 100 and 104 Li teaches preempting higher priority data packets to send lower priority data packets as described in the rejections of claims 17, 18, 19, 20, 22, 90, 91, 92, 93 and 95 above.

In regards to claims 8, 11, 12, 23, 26, 27, 31, 44, 49, 63, 68, 81, 84, 85, 96, 99, 100 and 104 Steer, in view of Howe, in view of Li in view of Jouppi do not teach data packets having special flags, which indicate start of data streams or fragments being transmitted over the network.

In regards to claims 8, 11, 12, 23, 26, 27, 31, 44, 49, 63, 68, 81, 84, 85, 96, 99, 100 and 104 Maresca teaches (column 6 lines 28-46) data packets start with a two byte start flag and end with a two byte end flag. These flags indicate to the telephone company equipment where each packet begins and ends and conform to telephone company specifications, which are a function of a particular telephone company network over which the packets are traveling. Following the start flag are two bytes, which confirm the length of the packet. One byte indicating the type of encoding algorithm used to create the audio/video data in the packet follows the length confirming bytes. The length confirming bytes and the encoding type byte are ignored by the telephone company equipment, being read by the hardware at the sending and receiving locations and by the bypass units only. Finally, twenty bytes of the actual encoded audio/video data 64 sought to be transmitted forms the remainder of the packet. In regards to claims 12 and 82 Maresca (column 5 lines 29-32) teaches a typical video/audio encoder/decoder, employing the encoding process, accepts a video input, and feeds it through a block processor, which divides it into many blocks comprising an image.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Steer, in view of Howe, in view of Li in view of Jouppi's teaching by incorporating Maresca's teaching of special flag in data. The motivation is that in a header-less data packet important header information can be incorporated in the frame as special start

flags. In this way packets will have fewer overhead than packets with full header and as such more bandwidth efficient transmission can be attained.

10. Claims 9, 10, 24, 25, 43, 45, 47, 48, 50, 52, 62, 64, 66, 67, 69, 71, 82, 83, 97 and 98 are rejected under 35 U.S.C. 103(a) as being unpatentable over (Steer in view of Howe, in view of Li, in view of Jouppi, in view of Maresca) and in view of Ellis et al. (US PAT 5497371), hereinafter referred to as Ellis.

In regards to claims 9, 10, 24, 25, 43, 45, 47, 48, 50, 52, 62, 64, 66, 67, 69, 71, 82, 83, 97 and 98 Steer in view of Howe, in view of Li, in view of Jouppi, in view of Maresca teach header-less frames being transmitted with a special flag appended to it.

In regards to claims 9, 10, 24, 25, 43, 45, 47, 48, 50, 52, 62, 64, 66, 67, 69, 71, 82, 83, 97 and 98 Steer in view of Howe, in view of Li, in view of Jouppi, in view of Maresca do not teach special flag having priority information.

In regards to 9, 10, 24, 25, 43, 45, 47, 48, 50, 52, 62, 64, 66, 67, 69, 71, 82, 83, 97 and 98 Ellis teaches (column 4 lines 48-52, figure 3 and figure 4) a header generator receives priority indication from the priority encoder and other information such as sequence number, flag, CRC etc. from the emission context and attaches the header and tail to each packet.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Steer, Howe, Maresca and Li's teaching to incorporate the priority information in special flag in the data packet as taught by Ellis. The motivation is that having priority information in the special header type flag will enable the process to employ

prioritization schemes during packet processing. As a result, the process will be able to provide different class of services.

In regards to claims 45, 47, 50, 52, 64, 66, 69 and 71 Steer teaches (column 10 lines 9-14 and figure 5) the PUSI bit of the block is set to 1 to flag the presence of the interrupting packet as a new packet. It can also be observed that the pointer field is set to which indicates that the new packet flagged by the PUSI bit is in fact an interrupting packet.

11. Claims, 13, 14, 15, 28, 29, 30, 40, 41, 42, 86, 87, 88, 101, 102 and 103 are rejected under 35 U.S.C. 103(a) as being unpatentable over (Steer in view of Howe, in view of Li, in view of Jouppi, in view of Maresca) and in view of Fukami et al. (US PAT 4688225), hereinafter referred to as Fukami.

In regards to claims 13, 14, 15, 28, 29, 30, 40, 41, 42, 86, 87, 88, 101, 102 and 103 Steer in view of Howe, in view of Li, in view of Jouppi, in view of Maresca teach various size frame being used for transmission as described in the rejections of 2, 17, 33, 75 and 90.

In regards to claims 13, 14, 15, 28, 29, 30, 40, 41, 42, 86, 87, 88, 101, 102 and 103 Steer in view of Howe, in view of Li, in view of Jouppi, in view of Maresca do not specifically teach of frames having base of 12, 16 or n bits.

In regards to claims 13, 14, 15, 28, 29, 30, 40, 41, 42, 86, 87, 88, 101, 102 and 103 Fukami teaches (column 4 lines 37-42) the word number N of one block of the foregoing error detection code C1 is the number in the case where the word length of the audio PCM data is 11

bits, e.g., 16 bits. Also, even in the case where the word length of the audio PCM data is l2 bits, e.g., 12 bits, the similar processing for error correction encoding is carried out.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to Steer in view of Howe, in view of Li, in view of Jouppi, in view of Maresca's teaching to incorporate the teachings of Fukami. The motivation is that it is known in the art to have data boundaries to be of even numbers. As such data boundaries of 8, 12, 16, 32, 64 and so on are very common in the art. The processor, memory and bus structure adhere to these boundaries. If the transmission packets follow these boundaries, less data processing is required in handling of these packets.

12. Claims 36 and 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over (Steer in view of Howe, in view of Li, in view of Jouppi as applied to claims 33 above) and in view of NOLL et al. (US PAT PUB 2002/0010793), hereinafter referred to as NOLL.

Steer, Howe, Jouppi and Li teach data sorting based on priority.

Steer, Howe, Jouppi and LI do not explicitly teach using stacking mechanism in first in last out manner.

NOLL teaches (page 7 section 0074) the output of the multiplexer is supplied to a priority state machine. The priority state machine implements the 802.5 specification priority stacking mechanism.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Steer, Howe, Jouppi and Li's teaching to incorporate NOLL's

priority stacking mechanism. The motivation is that such mechanism helps to prioritize data frames and to enable higher priority frames to access network ahead of low priority frames resulting in class of service implementation.

Prior art pertinent to the application but not uses in the office action:

- Urgent packet transmission Sourani US PAT 6631132
- Method and apparatus for transmission of high priority traffic on low speed communication lines Calvignac et al. US PAT 5557608
- Method and apparatus for graceful preemption of a digital communication link Beckner et al. US PAT 4542380

Conclusion

1. Applicant's amendment necessitated the rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salman Ahmed whose telephone number is (571)272-8307. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571)272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Salman Ahmed
Examiner
Art Unit 2666

SA

FRANK DUONG
PRIMARY EXAMINER